

Stock Assessment of Broad Whitefish, Humpback Whitefish and Least Cisco in Whitefish Lake, Yukon Delta National Wildlife Refuge, Alaska, 2001-2003

Whitefish *Coregoninae* spp. are an important subsistence fish harvested year-round in the Kuskokwim River drainage. Conservation concerns regarding reduced size and abundance of broad whitefish *Coregonus nasus* resulted in the 1992 creation of subsistence regulations for whitefish in Whitefish Lake. To understand the dynamics of whitefish utilizing Whitefish Lake, we used a flexible picket weir and deployed Floy tags to assess the abundance, age at length composition and migratory patterns of broad whitefish, humpback whitefish, *C. pidschian*, and least cisco *C. sardinella* between 2001 and 2003. Emigrations were highest in 2003 for broad whitefish with 254 leaving the lake. Humpback whitefish and least cisco emigrations were highest in 2002 with 31,985 and 26,195, respectively. Inter year tag returns indicated fidelity to the lake. Maximum ages were 20, 29, and 14 for broad and humpback whitefish and least cisco, respectively. Extensive migrations were indicated through the return of tagged whitefish harvested by subsistence fishers between the village of Tuluksak (rkm 192) and Medfra (rkm 863). Otolith chemical analysis indicated fish using Whitefish Lake are anadromous.

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